CLAIMS

1. A GLAST knockout mouse deficient in the function of an endogenous GLAST gene, as a model for normal tension glaucoma.

2. A GLAST knockout mouse deficient in the function of an endogenous GLAST gene, in which:

1) the intraocular pressure is within the normal range, and,

2) the number of cells in the retinal ganglions is reduced, when compared to a wild-type mouse.

3. The GLAST knockout mouse according to claim 2, wherein the intraocular pressure is not greater than 21 mmHg.

4. The GLAST knockout mouse according to claim 2, wherein the number of cells in the retinal ganglions is reduced by at least 20%, when compared to a wild-type mouse.

5. The GLAST knockout mouse according to claim 1 or 2, wherein the genetic background is the same or substantially the same as the genetic background of a C57BL/6 strain mouse.

6. The GLAST knockout mouse according to claim 1 or 2, wherein a neomycin-resistant gene is inserted into a region of the endogenous GLAST gene.

7. The GLAST knockout mouse according to claim 6, wherein the neomycin-resistant gene is inserted into the exon 6 of the endogenous GLAST gene.

8. Use of the GLAST knockout mouse according to claim 2 as a model for normal tension glaucoma.

9. A method of producing a GLAST knockout mouse deficient in the function of an endogenous GLAST gene, which comprises the following steps 1) to 6):

1) obtaining an ES cell from any mouse deficient in the function of one endogenous GLAST gene on the homologous chromosome,

2) introducing the ES cell obtained in step 1 into the mouse to generate a chimeric mouse carrying said cell,

3) crossing the chimeric mouse obtained in step 2 with a normal C57BL/6 strain mouse to obtain a heterozygous knockout mouse,

4) crossing the heterozygous mouse obtained in step 3 with a normal C57BL/6 strain mouse to generate a heterozygous knockout mouse,

5) repeating the crossing defined in step 4 at least a total of 5 times to

generate a heterozygous knockout mouse thereby to bring the genetic background closer to the C57BL/6 strain mouse, and,

6) crossing the heterozygous knockout mice obtained in step 5 with each other to generate a homozygous or heterozygous GLAST knockout mouse.

10. The production method according to claim 9, wherein the crossing defined in step 4 is repeated at least a total of 9 times in step 5.

11. A homozygous or heterozygous GLAST knockout mouse produced by the production method according to claim 9.

12. A method of screening a compound useful for the prevention and/or treatment of normal tension glaucoma, which comprises using the GLAST knockout mouse according to any one of claims 1, 2 and 11.

13. A method of screening a compound useful for the prevention and/or treatment of normal tension glaucoma, which comprises:

1) administering a test compound to the GLAST knockout mouse according to any one of claims 1, 2 and 11,

2) administering a test compound to a wild-type mouse,

3) assessing the number or function of surviving optic nerve cells in each of the mice defined above, prior to and after a given time period of the administration, and,

4) comparing the GLAST knockout mouse with the wild-type mouse in terms of the test results to determine effectiveness of the test compound.

14. The screening method according to claim 13, wherein the number of nerve cells in the retinal ganglions is counted and/or the retinal potential is measured to assess the number of surviving optic nerve cells or the function of optic nerve cells.